

CLAIMS

1. A stent comprising:
a non-woven tubular element having a plurality of openings therein, the tubular element comprising a plurality of interconnected members and at least one
5 frangible restraining member which connects at least two interconnected members and is disposed between and not about the at least two interconnected members, at least a portion of the stent constructed and arranged to self-expand upon breaking of the at least one frangible restraining member.

2. The stent of claim 1 wherein the portion of the stent which is constructed and
10 arranged to self-expand upon breaking of the frangible restraining member is made of a shape-memory material.

3. The stent of claim 2 wherein the shape memory material is from the group consisting of shape-memory metals and shape-memory plastics.

4. The stent of claim 1 wherein the entirety of the stent is constructed and arranged
15 to self-expand upon breaking of the frangible restraining member.

5. The stent of claim 1 wherein the plurality of interconnected members and the at least one frangible restraining member are constructed from the same material.

6. The stent of claim 1 wherein the at least one frangible restraining member is constructed from a different material than the interconnected members.

20 7. The stent of claim 1 comprising a plurality of frangible restraining members, each of which extends between at least two adjacent interconnected members.

8. The stent of claim 7 wherein the frangible restraining members are selected from at least one member of the group consisting of: frangible welds, frangible glues, frangible solder, and any combination thereof.

25 9. The stent of claim 7 wherein the frangible restraining members are distributed uniformly throughout the stent.

10. The stent of claim 7 wherein the frangible restraining members are distributed about at least one end of the stent.

11. The stent of claim 7 wherein the stent is capable of withstanding radially and/or
30 axially outward pressures of up to 2 atmospheres without breakage of the frangible restraining members.

12. The stent of claim 7 wherein the stent is capable of withstanding radially and/or axially outward pressures of up to 5 atmospheres without breakage of the frangible restraining members.

13. The stent of claim 7 wherein the stent is capable of withstanding radially and/or 5 axially outward pressures of up to 12 atmospheres without breakage of the frangible restraining members.

14. The stent of claim 1 wherein the frangible restraining members includes a circumferential extending component.

15. The stent of claim 1 wherein the frangible restraining member includes a curved 10 portion.

16. The stent of claim 7 wherein the plurality of frangible restraining member are arranged to form one or more helical bands.

17. A stent comprising a generally tubular body of non-woven elements and at least one frangible restraining member disposed about at least a portion of the tubular body, 15 the at least one frangible restraining member made of the same material as the tubular body, at least a portion of the stent capable of self-expanding upon breaking of the at least one frangible restraining member.

18. The stent of claim 17 wherein the generally tubular body and the at least one frangible restraining member are made of the same material.

20 19. The stent of claim 18 wherein the generally tubular body and the at least one frangible restraining member are made of the same metals.

20. The stent of claim 17 wherein the generally tubular body and the at least one frangible restraining member are made of different materials.

21. The stent of claim 17 wherein the generally tubular body and the at least one 25 frangible restraining member are made of different metals.

22. The stent of claim 17 wherein the at least one frangible restraining member is helical wound about the tubular body.

23. The stent of claim 17 wherein the at least one frangible restraining member is in the form of a band disposed at least partially about the circumference of the tubular 30 member.

24. The stent of claim 17 comprising a plurality of frangible restraining members.

25. The stent of claim 17 wherein the at least one frangible restraining member is interwoven through the tubular body.

26. The stent of claim 17 where the entirety of the stent is capable of self-expanding upon breaking of the at least one frangible restraining member.

5 27. The stent of claim 17 wherein the stent is capable of withstanding radially and/or axially outward pressures of up to 2 atmospheres without breakage of the at least one frangible restraining member.

28. The stent of claim 17 wherein the stent is capable of withstanding radially and/or axially outward pressures of up to 5 atmospheres without breakage of the at least one 10 frangible restraining member.

29. The stent of claim 17 wherein the stent is capable of withstanding radially and/or axially outward pressures of up to 12 atmospheres without breakage of the at least one frangible restraining member.

30. A stent comprising a generally tubular body and a frangible restraining member 15 disposed about at least a portion of the tubular body, at least a portion of the stent capable of self-expanding upon breaking of the frangible restraining member, the frangible restraining member at least partially constructed from metal, plastic or a combination thereof.

31. The stent of claim 30 wherein the frangible restraining member is helical wound 20 about the tubular body.

32. The stent of claim 30 wherein the frangible restraining member is in the form of a band disposed about the circumference of the tubular member.

33. The stent of claim 30 comprising a plurality of frangible restraining members.

34. The stent of claim 30 where the entirety of the stent is capable of self-expanding 25 upon breaking of the frangible restraining member.

35. The stent of claim 30 wherein the stent is capable of withstanding radially and/or axially outward pressures of up to 2 atmospheres without breakage of the frangible restraining member.

36. The stent of claim 30 wherein the stent is capable of withstanding radially and/or 30 axially outward pressures of up to 5 atmospheres without breakage of the frangible restraining member.

37. The stent of claim 30 wherein the stent is capable of withstanding radially and/or axially outward pressures of up to 12 atmospheres without breakage of the frangible restraining member.

38. A stent formed of a plurality of interconnected struts, the interconnected struts including temporary struts and permanent struts, the temporary struts but not the permanent struts breaking upon the application of a predetermined radially and/or axially outward pressure to the stent.

39. The stent of claim 38 wherein the predetermined radially and/or axially outward pressure is in excess of 2 atmospheres.

40. The stent of claim 38 wherein the predetermined radially and/or axially outward pressure is in excess of 12 atmospheres.

41. A method of delivering a stent to a desired bodily location comprising the steps of:

- (a) providing a catheter with an expandable member and a stent as in claim 1 disposed thereabout;
- (b) inserting the stent and catheter in a bodily vessel and delivering the stent to the desired bodily location;
- (c) expanding the expandable member to break the at least one frangible restraining member; and thereafter
- (d) allowing the stent to self-expand.

42. The method of claim 41 further comprising the step of:

- (e) seating the stent into the desired body location.

43. A method of delivering a stent to a desired bodily location comprising the steps of:

- (a) providing a catheter with an expandable member and a stent as in claim 17 disposed thereabout;
- (b) inserting the stent and catheter in a bodily vessel and delivering the stent to the desired bodily location;
- (c) expanding the expandable member to break the at least one frangible restraining member; and thereafter
- (d) allowing the stent to self-expand.

44. A method of delivering a stent to a desired bodily location comprising the steps of:

(a) providing a catheter with an expandable member and a stent as in claim 30 disposed thereabout;

5 (b) inserting the stent and catheter in a bodily vessel and delivering the stent to the desired bodily location;

(c) expanding the expandable member to break the at least one frangible restraining member; and thereafter

10 (d) allowing the stent to self-expand.

45. A method of delivering a stent to a desired bodily location comprising the steps of:

(a) providing a catheter with an expandable member and a stent as in claim 38 disposed thereabout;

15 (b) inserting the stent and catheter in a bodily vessel and delivering the stent to the desired bodily location;

(c) expanding the expandable member to break the at least one frangible restraining member; and thereafter

(d) allowing the stent to self-expand.